AN OVERVIEW OF OPEN SCIENCE TRENDS IN THE EAST ASIAN REGION

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Today’s presentation is based on our personal opinions and own research conducted during the off-duty hours. The presentation does not reflect the positions and ideas of organizations we belong to. We have no conflict of interest with any private or public sectors.

A portion of this presentation on “Open Access” is based on a presentation given by Dr. Carly Robinson, the Assistant Director of the Office of Scientific and Technical Information, Department of Energy with her permission.
WHAT IS OPEN SCIENCE?

The concept of opening all aspects of scientific research, to allow others to freely follow the process and collaborate.

https://blog.f1000.com/2014/11/11/what-is-open-science/

For the researcher: transparency, reproducibility, dissemination, and transfer of new knowledge through open tools and workflows.

Encompasses unhindered access to scientific articles, access to data from public research, and collaborative research enabled by ICT tools and incentives.

Research data / findings produced using government funding to be made freely available to the public.

OECD (The Organization for Economic Co-operation and Development) https://www.oecd.org/sti/inno/open-science.htm
WHAT IS OPEN DATA?

“Open data and content can be freely used, modified, and shared by anyone for any purpose”
https://opendefinition.org/

Goal of open data is to make data available to anyone and reusable by anyone for further analysis
https://blog.f1000.com/2014/10/07/what-is-open-data/

https://digital.gov/2016/05/03/an-introduction-to-open-data-and-apis/
WHAT IS OPEN-SOURCE SOFTWARE?

- Computer software whose source code is released under a license in which the copyright holder grants users the rights to study, change, and distribute the software to anyone and for any purpose.

- Drives innovation more quickly and gives better solutions because of community support and a broader perspective.

https://www.nasa.gov/open/open-source-development.html
A move from traditional scholarly peer review process. Typically includes:

- **Open identities**: Authors and reviewers are aware of each other's identity.

- **Open reports**: Reports by reviewers are published alongside the relevant article (rather than being kept confidential).

- **Open participation**: The wider community (and not just invited reviewers) are able to contribute to the review process.

https://en.wikipedia.org/wiki/Open_peer_review

https://www.fosteropenscience.eu/learning/open-peer-review/#/id/5a17e150c2af651d1e3b1bce
International movement with focus on scientific journal/research articles. The “Three Bs”:

- **Budapest Open Access Initiative (2002):** free, immediate, online access; permission to download, distribute, pass as data to software

- **Bethesda Statement on Open Access Publishing (2003)**

- **Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities (2003):** copyright holder must in advance allow users to “copy, use, distribute, transmit and display the work publicly and to make and distribute derivative work.” Must properly attribute authorship.

https://www.budapestopenaccessinitiative.org/https://sparcopen.org/open-access/
“Green” OA: self archiving. Can publish in any scholarly journal, but secure right to deposit a version in an OA repository (as part of the copyright transfer process).

“Gold” OA: publish directly. Titles are maintained in Directory of Open Access Journals (DOAJ).

OA is a business model shift:
From USER/SUBSCRIBER paying to PUBLISHER bearing costs
AUTHORS usually pay article processing charge (APC).
Persistent identifiers (PIDs) are digital identifiers that are globally unique, persistent, machine resolvable, have an associated metadata schema, identifiers an entity, and is frequently used to disambiguate between entities.

The identifier is a string of numbers, letters, and/or symbols assigned to the digital object.

**Digital Object Identifiers (DOIs):**

- PIDs for research outputs
  https://doi.org/10.1007/s10874-014-9287-8

- PIDs for awards, grants, contracts
  https://doi.org/10.46936/10.25585/60000017

**ORCID iDs:**

- PIDs for People
  https://orcid.org/0000-0002-8523-1478

**ROR IDs:**

- PIDs for organizations
  https://ror.org/02ttsq026
AN OVERVIEW OF SCIENTIFIC OPEN ACCESS TRENDS IN THE EAST ASIAN REGION
<table>
<thead>
<tr>
<th>Directory of OA Repositories (Open DOAR)</th>
<th>Directory of OA Journals (DOAJ)</th>
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<tbody>
<tr>
<td>Korea:</td>
<td>238</td>
</tr>
<tr>
<td>Japan</td>
<td>113</td>
</tr>
<tr>
<td>China (PRC)</td>
<td>328</td>
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<td>(This search includes Taiwan)</td>
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<tr>
<td>Taiwan</td>
<td>58</td>
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<td>Hong Kong</td>
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https://v2.sherpa.ac.uk/opendoar/  https://doaj.org/
Improved government guidance and policy clarity; greater integration in international system of scientific scholarly communications, including indexing (e.g., Medline, Scopus)

Benefits for individual and institutional visibility

Publication shifts, including collaboration with international publishers (e.g., Elsevier, Springer),

Education on benefits (and cautions) on OA publishing.


https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7812024/
Chinese Academy of Sciences (CAS) and National Natural Science Foundation of China (NSFC) issued a statement in 2014: all state funded work must be deposited in a repository and must be made open access within 12 months

NSFC’s Open Access Repository https://ir.nsfc.gov.cn/

NSFC, National Science Library (NSL), and National Science and Technology Library (NSTL) voiced support for the European-led initiative, Plan S: “to transform, as soon as possible, research papers from publicly funded projects into immediate open access after publication, and we [China] support a wide range of flexible and inclusive measures to achieve this goal”.

Understanding the highly regulated publication system: state-controlled through central, regional, or local governments; multiple layers of management; issues of independence and transparency in editorial process.


Improving QUALITY beyond QUANTITY; reaching beyond China to international scientific community.
CAS, NSFC, and several other entities signed the international “Open Access 2020 Initiative” in 2017. It essentially declares that China will actively contribute to the reform of the global scientific communication system.
https://blog.doaj.org/2017/11/24/large-scale-implementation-of-open-access-in-china/

CAS actively collaborating with international organizations and publishers

For all funded research across the 17 ministries: research output data must be submitted through the National Technical Information Service (NTIS) platform.

The “Open Data Portal” consolidates science and technology data sets generated from government supported research institutes and makes them publicly available.

KOREA

1960s: Laying S&T foundation
1980s: Enter innovation
1990s: Compete with the world
2000s: Lead the world

KISTI website, “History” https://www.kisti.re.kr/eng

Korea Institute of Science and Technology Information (KISTI): goal is to build a national supercomputing ecosystem for science and technology innovation and to invigorate sharing and utilizing these knowledge resources

National Science and Technology Information Service (NTIS): led by the Ministry of Science, ICT and Future Planning (MSIP) and operated by KISTI

National Digital Science Library (NDSL): an information portal/integrated search service; goal is to improve productivity of national research and development initiatives; operated by KISTI

Open Access Korea: consolidates 38 institutional repositories; provides free access to journals of S&T professional societies (shift from membership-based access) http://www.oak.go.kr/main/main.do

Korea Med Synapse: digital archive and reference-linking platform that provides full text access to 135 medical journals (work by the Korean Association of Medical Journal Editors) https://synapse.koreamed.org/

Korea Open Access Repository: a new project from 2020: Self-archiving; provides tools, such as collaborative co-authoring and lists of questionable journals and conferences. https://accesson.kisti.re.kr/main/main.do
Japan was early starter on Open Science project...

Council for Science and Technology Policy under Cabinet Office: S&T basic science law since 1995

- JST
- NII
- JSPS
- AMED

However, current challenges for Open Science...
J-STAGE is an electronic journal platform for Japanese academic journals, administered by the Japan Science and Technology Agency (JST).

The site provides free access to full text electronic journals, proceedings, and reports from various Japanese scientific societies.

Over 3000 journals included.

90% open access.

J-STAGE (1998-)
STEPS TOWARDS OPEN SCIENCE

Japan Science Technology Information Aggregator, Electronic

https://www.jstage.jst.go.jp/static/pages/JstageOverview/-char/en

It includes the Journal@rchive!
In March 2018, JST established the J-STAGE Advisory Committee, made up of outside experts on academic information distribution, university libraries, open science, and journal publishing. The committee considered future directions for J-STAGE and compiled its basic stance and policy measures as a mid- to long-term strategy for the operation of J-STAGE in March 2019. Based on this strategy, the implementation method and timeline will be fleshed out, and the necessary measures will be phased in.

Communication and negotiation with publishers through CHORUS! https://dashboard.chorusaccess.org/

Research Center for Open Science and Data Platform (RCOS)  https://rcos.nii.ac.jp/en/

https://www.japan.go.jp/kizuna/category/science_technology.html
KAKEN
Database for Researchers and Research in Japan funded by Japan Society for Promotion of Science (JSPS)
https://kaken.nii.ac.jp/index/

IRDB
This is a useful search engine to locate texts, data, etc, in the institutional repositories of Japanese universities and institutes. https://irdb.nii.ac.jp/en

DDBJ
Bioinformation and DDBJ Center provides sharing and analysis services for data from life science researches and advances science. https://www.ddbj.nig.ac.jp/index-e.html

LOCATING OPEN ACCESS RESOURCES
NON-CENTRALIZED ACTIONS

“Transformative Agreements”
Ex: Elsevier and the Japan Alliance of University Library Consortia for E-Resources (about 500 members).

“Read and Publish” Agreements
Ex: Chinese Academy of Sciences, the National Science Library, and Oxford University Press
OECD RECOMMENDATION CONCERNING ACCESS TO RESEARCH DATA FROM PUBLIC FUNDING

AREAS OF POLICY GUIDANCE

1/ Data governance for trust
2/ Technical standards and practices
3/ Incentives and rewards
4/ Responsibility, ownership and stewardship
5/ Sustainable infrastructures
6/ Human capital
7/ International co-operation for access to research data

EXPANDED SCOPE COVERS RESEARCH DATA, METADATA, ALGORITHMS, WORKFLOWS, MODELS, AND SOFTWARE (INCLUDING CODE)

OPEN ACCESS AND OPEN SCIENCE INTO THE NEXT DECADES?

THANK YOU FOR YOUR ATTENTION!

Contact us for any questions!

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https://www.loc.gov/collections/open-access-books/about-this-collection/